

Work Order ID 152535 - 1

152535

Page 1

Thursday, October 27, 2016 1:54:05 PM

Item ID: D4880-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Strut

Start Date: 10/27/2016 Start Qty: 15.00 *15*

Cust Item ID:

Required Date: 10/28/2016 Req'd Qty: 15.00 *15*

Customer:

Reference:

Approvals: Process Plan: em Date: 10/10/27 Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4880	C

100 0.00

100

DOOSAN LATHE

Doosan

Memo

3.30

Doosan Lathe

1- Turn as per Folio FB245
Rev: AA & Dwg D4880 Rev: C

2- Deburr

9.0 16-10-31 9.0

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.03

Quality Control

9.0 16-10-31 9.0

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

152535

Thursday, October 27, 2016 1:54:05 PM

Item ID: D4880-1

Accept

N9000401 00

Setup Start *NS1*

Revision ID:

Stop ***NS2***

Item Name: Strut

Start Date: 10/27/2016 **Start Qty:** 15.00

15

Cust Item ID:

Required Date: 10/28/2016 **Req'd Qty:** 15.00

15

Customer:

Reference:

Run Start *NR1*

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC8- Inspect parts - second check	0.00							DAS 38 9-89
120 QC Quality Control	Memo	0.05				9			NOV 01 2016
130	Outsource process - NDT per QSI038 4.1	0.00				9		NOV 02 2016	DAS 13 9-89
130 Outsource2 Outsource process - NDT	Memo ISSUE P/O : <u>34132</u> C OF C IS REQUIRED	0.00							
140	Receive & Inspect for Damage & Mat'l Certs	0.00				9x		NOV 02 2016	DAS 26 9-89
140 Packaging Packaging	Memo	0.05							

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS					
Part No. _____		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
NCR No. _____		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
Date: _____	Step #: _____	QTY Effective: _____					

MRB (QSI042) Approval

Description Work Order Deviation

Disposition

Completed By

Lead hand / Supervisor
Approval Verification

QC / QA Coordinator
Approval

Root Cause

Environment ☐	No Re-verification ☐
Design ☐	Operator ☐
Doc/Data ☐	Offset/Setup ☐
Equip/Tooling ☐	Supplier ☐
Handling/Pre ☐	Training ☐
Material ☐	Use for Testing ☐
Internal Transport ☐	Poor Information ☐
Tribal Knowledge ☐	Rushing ☐
LOA ☐	Product Improvement ☐
Substation ☐	Process Improvement ☐
Past Expiry Date ☐	Manufacturing Process ☐
Misidentified ☐	Past Due ☐

FAULT CATEGORY

Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐

OTHER: _____

Work Order ID 152535

Thursday, October 27, 2016 1:54:05 PM

152535

Page 3

Item ID: D4880-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut
Start Date: 10/27/2016 Start Qty: 15.00 ***15*** Cust Item ID:
Required Date: 10/28/2016 Req'd Qty: 15.00 ***15*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.05				9			DAS 30 9-89 NOV 02 2016
160 *160* Packaging Packaging	Identify as per dwg & Stock Location: <u>GA</u> Memo	0.00 0.03			DAS 30 9-89	9			NOV 02 2016
170 *170* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.25			DAS 21 9-89				NOV 03 2016 DAS 21 9-89 NOV 03 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY							
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐		Power Loss/Surge ☐		Positioned Wrong ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐		Folio/Program ☐		Outside Dimensions ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐		Grain ☐		Over/Under tolerance ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐		Weld ☐		Part Incorrect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐		Wrong Stock Pulled ☐		Part Lost/Missing ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐		Out of Sequence ☐		Part Moved ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐		Off-set ☐		Drawing ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐		Mislabeled ☐		Finish ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐		Fit/Function ☐		Misread ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐		Misaligned/off center ☐		Turning Sequence ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____							
Misidentified ☐		Past Due ☐									

Picklist Print

Thursday, November 03, 2016 2:51:22 PM

Page 1

Work Order ID: 152535

152535

Parent Item: D4880-1

D4880-1

Parent Item Name: Strut

Start Date: 10/27/2016

Required Date: 10/28/2016

Start Qty: 15.00

Required Qty: 15.00

Comments: IPP REV:A 13.12.17 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R0.750		Purchased	No				f	2.9830		12			
M174PH-H900R0 750									**	<u>12.1680</u>			
17-4 SS H900 ROUND BAR 0.750"													

Location

Loc Qty

Loc Code

MAT031

2.983

M129892

2.983



DQA: _____ Date: _____

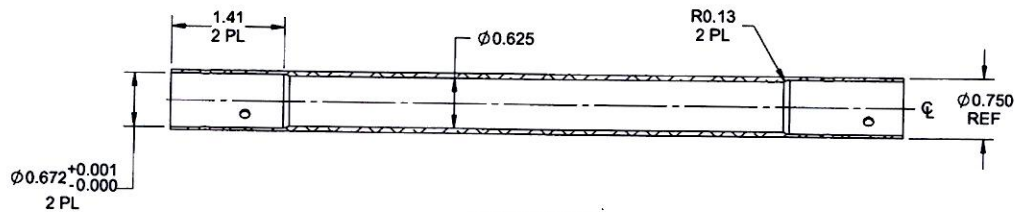


WORK ORDER NON-CONFORMANCE / UPDATE

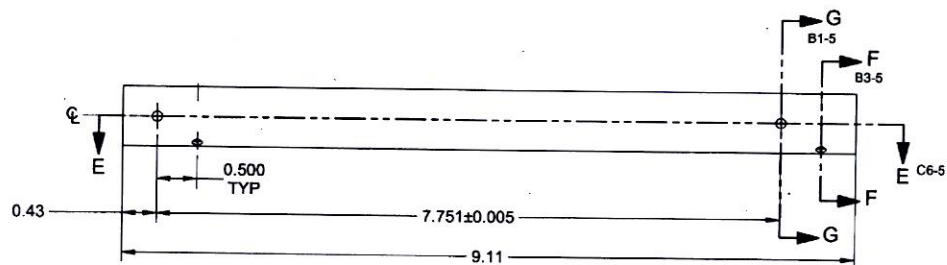
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
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Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								



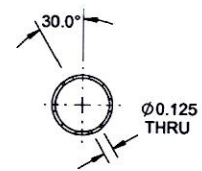
SECTION E-E 84-5



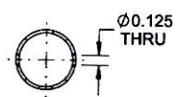
D4880-1 STRUT

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 152535

2em 16/10/27



SECTION F-F C5-5
2 PL



SECTION G-G C5-5
2 PL

RELEASED
2014-07-07
W

NOTES:

- 1) MATERIAL: 17-4 PH/S17400/TYPE 630 SS ROUND BAR, H900 CONDITION
PER AMS 5643/ASTM A564
DART SPEC M17-4-R
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.6
- 7) WEIGHT: 0.31 lbs
- 8) LIQUID PENETRANT INSPECT PER QSI 038 6.1.1 (ASTM E1417 LEVEL 2)

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VS		
CHECKED	HS	DRAWING NO.	REV. C
MFG. APPR.	JLM	D4880	SHEET 5 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	LEG ASSEMBLY	NTS
DATE	14.06.24	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
		OTHER :							



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34132**

Purchase Order Date 11/1/2016

PO Print Date 11/2/2016

Page Number 2 of 4

Order From :
SKYSERVICE
6120 MIDLAND ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Code
Ship To Phone
Ship Via: Delivered
Ship Acct:

Buyer
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Chantal Lavoie

3	152487	D4883-5 END FITTING	11/2/2016	12.00	\$12.31	\$147.72
			Yes			
			11/2/2016			

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPIAS PER ASTM 1417 LEVEL 2

Line Total: \$147.72

4	152535	D4880-1 STRUT	11/2/2016	9.00	\$14.41	\$129.71
			Yes			
			11/2/2016			

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPIAS PER ASTM 1417 LEVEL 2

Line Total: \$129.71

5	148169	D412-664-203 CROSSTUBE	11/2/2016	1.00	\$147.72	\$147.72
			Yes			
			11/2/2016			

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPIAS PER ASTM 1417 LEVEL 2

Line Total: \$147.72

Notes

11/2/2016

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO30004	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO34132
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT (LIQUID PENETRANT CRACK TEST) ON THE FOLLOWING TWENTY ONE (21) END FITTINGS AND ON THE FOLLOWING NINE (9) STRUTS:

ITEMS ID# D4883-5 END FITTINGS WORK ORDER# 152487 (12 ea)

ITEMS ID# D4883-3 END FITTINGS WORK ORDER# 152525 (09 ea)

ITEMS ID# D4880-1 STRUTS WORK ORDER# 152535 (09 ea)

DAS
26
9-89**NOV 02 2016**

Action Taken:						Date:	Initial/Stamp:
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE AS PER ASTM1417 M-13						2nd 20/11	
NO CRACK FOUND							
PEN.(ZL-56, MPO13600), DEV.(SKD-S2, MPO11715), CLEANER(SKC-S, MPO							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp:	Date: 2nd 20/11
Name: CHRISTIAN BRIEN		